

INVESTING IN OUR FUTURE

Quantifying the Impact of Completing the East Coast Greenway in the Delaware River Watershed

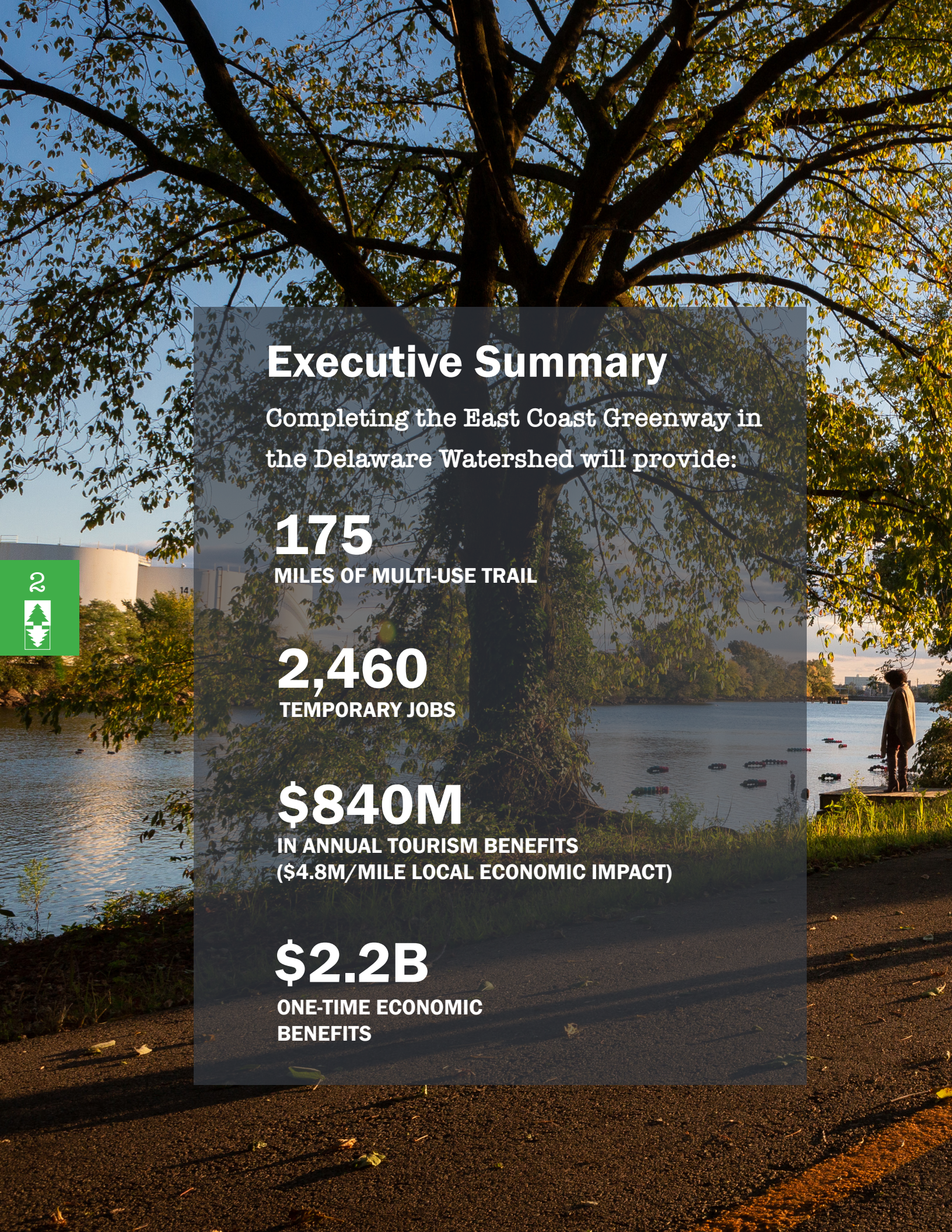


Report Prepared For:

East Coast Greenway® ALLIANCE

Prepared By:

NV5 | ESI ECONSULT SOLUTIONS INC.



Executive Summary

Completing the East Coast Greenway in the Delaware Watershed will provide:

175
MILES OF MULTI-USE TRAIL

2,460
TEMPORARY JOBS

$840M
IN ANNUAL TOURISM BENEFITS ($4.8M/MILE LOCAL ECONOMIC IMPACT)

$2.2B
ONE-TIME ECONOMIC BENEFITS

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East Coast Greenway at Bartram's Garden in West Philadelphia.
East Coast Greenway Alliance photo

On the cover: celebrating on Schuylkill River Trail.
Schuylkill Banks photos


Delaware Watershed
ME
Calais
Bangor
Augusta
Portland
NH
Portsmouth
MA
Boston
NY
Hartford
CT
Providence
RI
New Haven
NJ
New York
PA
Philadelphia
Trenton
Wilmington
MD
Baltimore
Washington DC
Annapolis
DE
Fredericksburg
VA
Richmond
Norfolk
NC
Raleigh
Fayetteville
New Bern
Wilmington
SC
Myrtle Beach
Charleston
GA
Savannah
Brunswick
Jacksonville
St.Augustine
FL
Melbourne
Miami
Key West
East Coast
Greenway
East Coast Greenway
Connecting people to place
from Maine to Florida
SPINE ROUTE
COMPLEMENTARY ROUTE
FERRY OR TRANSIT
greenway.org

What is the East Coast Greenway?

The East Coast Greenway is developing into one of the nation's longest continuous biking and walking paths, connecting 15 states and 450 communities from Key West, Florida, to Calais, Maine. The in-progress Greenway is a place that bicyclists, walkers, runners, skaters, horseback riders, wheelchair users, and cross-country skiers of all ages and abilities can enjoy.

The dream of a 3,000-mile protected biking and walking route represents a commitment to public health, environmental sustainability, economic development, and civic engagement. The Greenway connects people to nature and communities via a safe and accessible multi-use path.



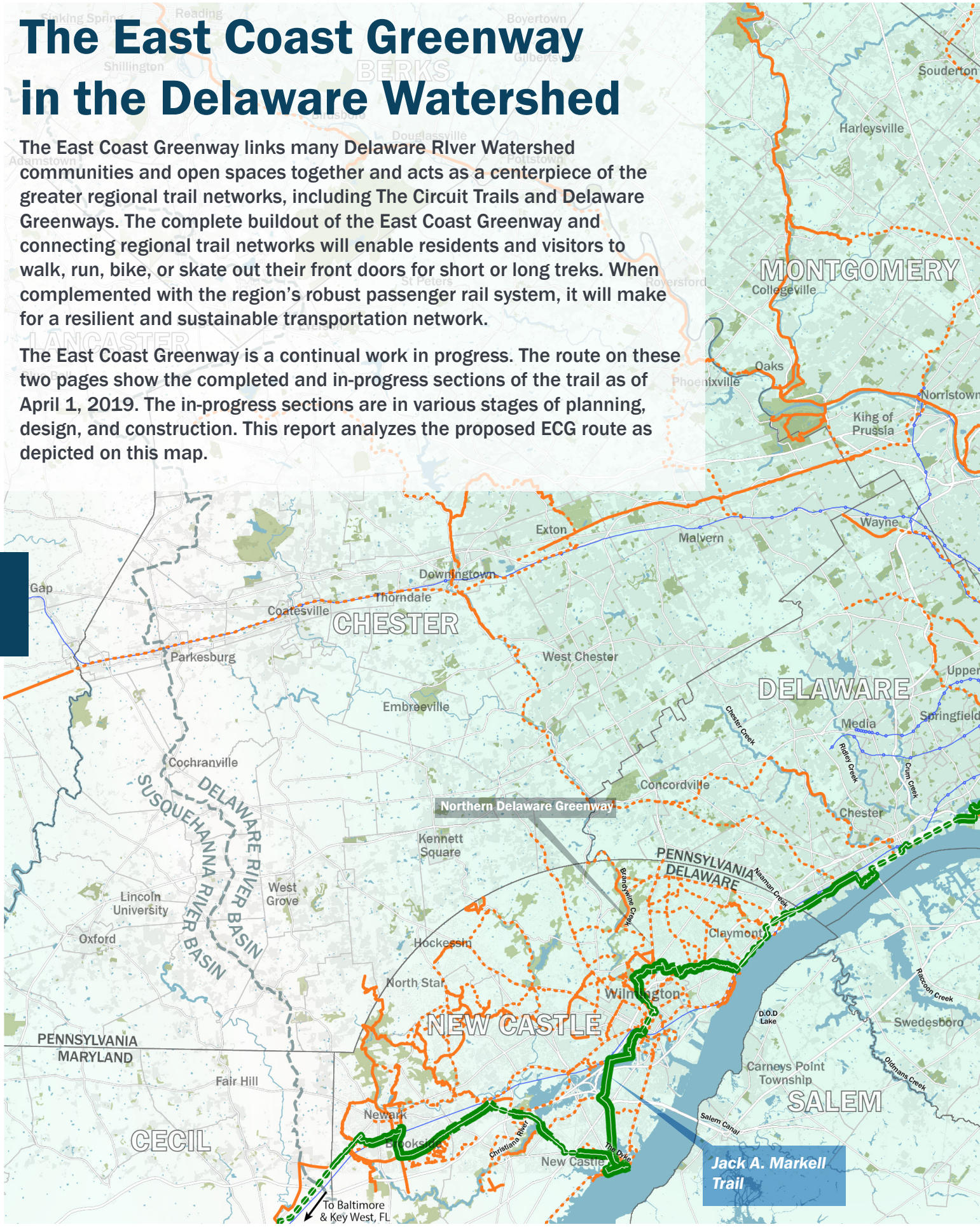
ABOUT THIS REPORT

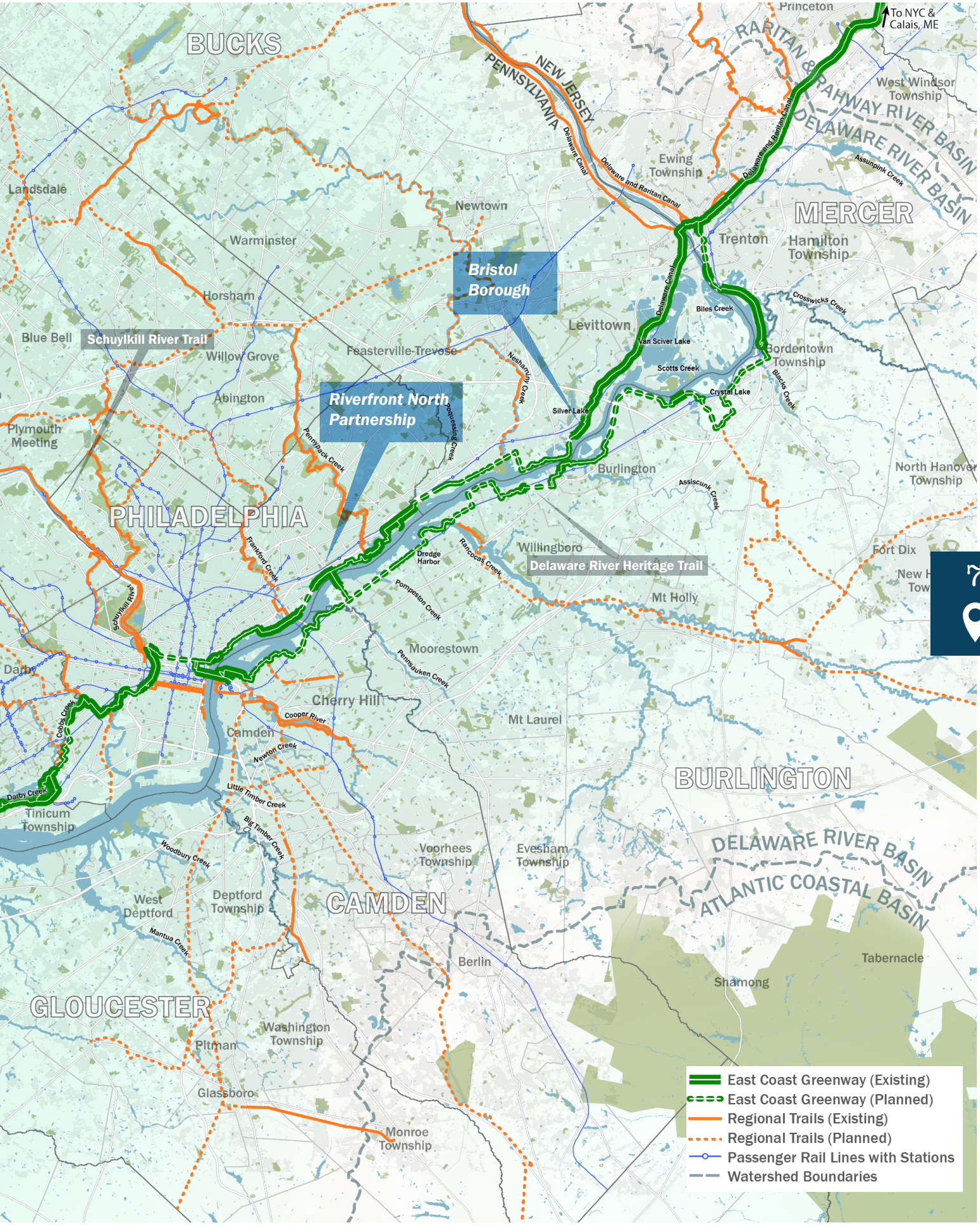
This report looks at the impact of the East Coast Greenway within the Delaware River Watershed specifically, not the entire regional trail network. The figures, analysis, and mapping in this report examined the ultimate, fully built East Coast Greenway route across Delaware, Pennsylvania, and South Jersey, which is in various stages of planning, design, and construction. Many segments of the East Coast Greenway are presently signed as interim on-road routes. Those interim routes are not being considered in this report. The map on pages 6-7 shows the fully built Greenway route used in this analysis.

The East Coast Greenway in the Delaware Watershed

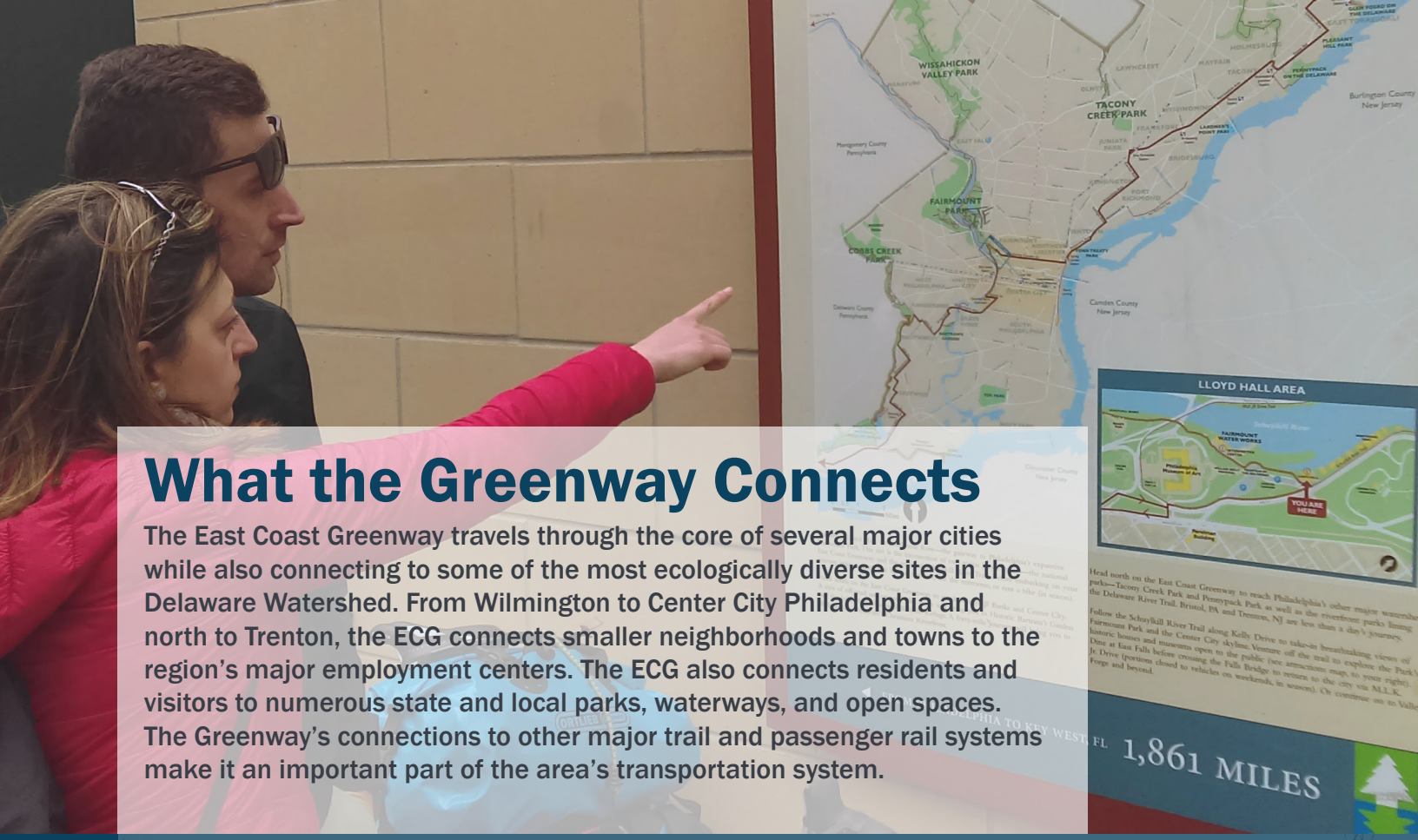
The East Coast Greenway links many Delaware RIver Watershed communities and open spaces together and acts as a centerpiece of the greater regional trail networks, including The Circuit Trails and Delaware Greenways. The complete buildout of the East Coast Greenway and connecting regional trail networks will enable residents and visitors to walk, run, bike, or skate out their front doors for short or long treks. When complemented with the region's robust passenger rail system, it will make for a resilient and sustainable transportation network.

The East Coast Greenway is a continual work in progress. The route on these two pages show the completed and in-progress sections of the trail as of April 1, 2019. The in-progress sections are in various stages of planning, design, and construction. This report analyzes the proposed ECG route as depicted on this map.




BUCKS
PHILADELPHIA
MERCER
BURLINGTON
CAMDEN
GLOUCESTER
PENNSYLVANIA
NEW JERSEY
To NYC & Calais, ME
Princeton
West Windsor Township
RARITAN & RAHWAY RIVER BASIN
DELAWARE RIVER BASIN
ATLANTIC COASTAL BASIN
Ewing Township
Trenton
Hamilton Township
Bordentown Township
Levittown
Bristol Borough
Newtown
Warminster
Horsham
Landsdale
Blue Bell
Willow Grove
Feasterville-Trevose
Abington
Plymouth Meeting
Schuylkill River Trail
Riverfront North Partnership
Delaware River Heritage Trail
Burlington
North Hanover Township
Fort Dix
Mt Holly
Willingboro
Moorestown
Mt Laurel
Cherry Hill
Camden
Darby
Tinicum Township
West Deptford
Deptford Township
Voorhees Township
Evesham Township
Berlin
Shamong
Tabernacle
Washington Township
Pitman
Glassboro
Monroe Township
Delaware Canal
Delaware and Raritan Canal
Assunpink Creek
Crosswicks Creek
Biles Creek
Van Sciver Lake
Scotts Creek
Crystal Lake
Blacks Creek
Silver Lake
Neshaminy Creek
Pennypack Creek
Poquessing Creek
Frankford Creek
Schuylkill River
Dredge Harbor
Rancocas Creek
Pompeston Creek
Pennsauken Creek
Assiscunk Creek
Cooper River
Newton Creek
Little Timber Creek
Big Timber Creek
Woodbury Creek
Mantua Creek
Darby Creek
Cobbs Creek
East Coast Greenway (Existing)
East Coast Greenway (Planned)
Regional Trails (Existing)
Regional Trails (Planned)
Passenger Rail Lines with Stations
Watershed Boundaries

7



What the Greenway Connects

The East Coast Greenway travels through the core of several major cities while also connecting to some of the most ecologically diverse sites in the Delaware Watershed. From Wilmington to Center City Philadelphia and north to Trenton, the ECG connects smaller neighborhoods and towns to the region's major employment centers. The ECG also connects residents and visitors to numerous state and local parks, waterways, and open spaces. The Greenway's connections to other major trail and passenger rail systems make it an important part of the area's transportation system.

34 MUNICIPALITIES

8 COUNTIES

6 STATE PARKS

1 NATIONAL WILDLIFE REFUGE

9 MAJOR TRAIL SYSTEMS:

- CIRCUIT TRAILS NETWORK
- DELAWARE GREENWAYS
- SCHUYLKILL RIVER GREENWAY NATIONAL HERITAGE AREA
- DELAWARE & LEHIGH NATIONAL HERITAGE CORRIDOR
- DELAWARE & RARITAN CANAL
- CAPITAL TO COAST TRAIL
- DELAWARE STATE BIKE ROUTE 1
- PENNSYLVANIA STATE BIKE ROUTE E
- DELAWARE RIVER HERITAGE TRAIL

51 PASSENGER RAIL STATIONS (WITHIN 1 MILE OF ECG)

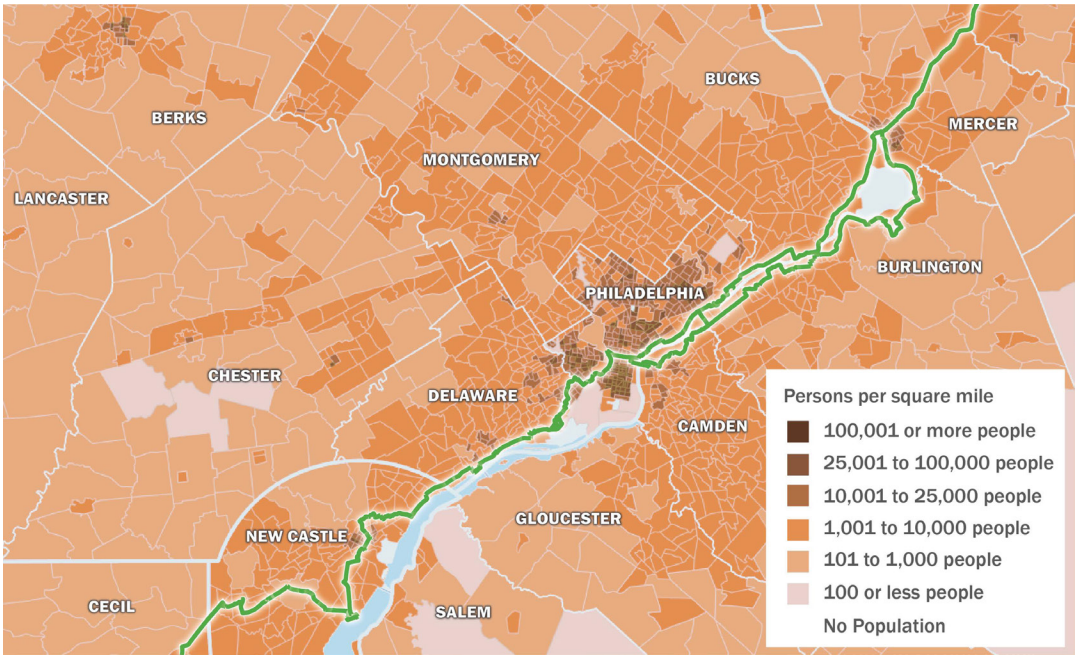
- AMTRAK: 5
- SEPTA REGIONAL RAIL: 24
- NJ TRANSIT: 22

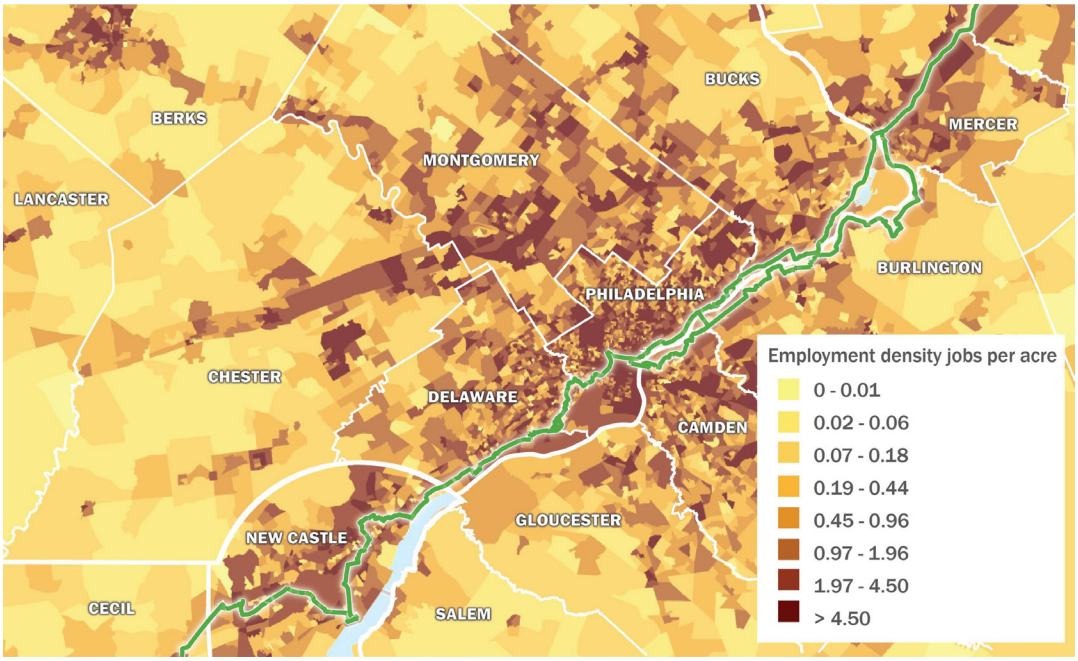
466K
POPULATION WITHIN WALKING DISTANCE (.25 MILE) OF THE ECG

1.78M
POPULATION WITHIN BICYCLING DISTANCE (2.5 MILES) OF THE ECG

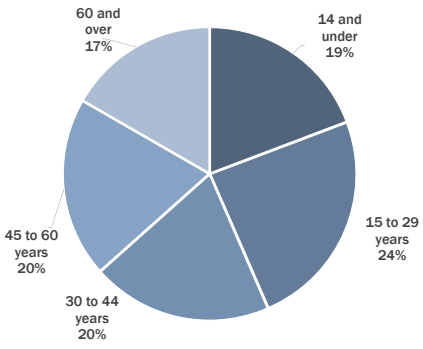
272K
JOBS WITHIN WALKING DISTANCE (.25 MILE) OF THE ECG

1.47M
JOBS WITHIN BICYCLING DISTANCE (2.5 MILES) OF THE ECG

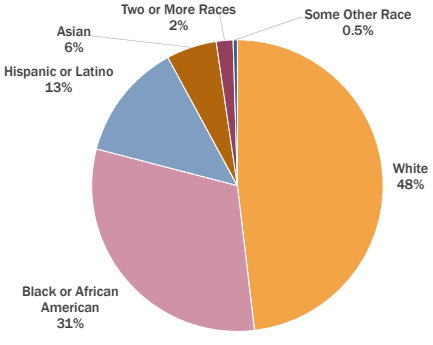




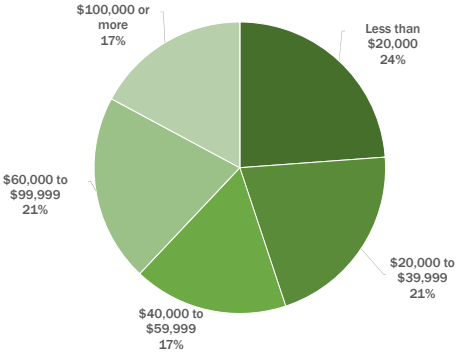
The East Coast Greenway links some of the most densely populated neighborhoods and job-rich areas in the Delaware Watershed (above), including a diverse range of residents by age, race, and income (below).



Percentages of Population by Age within 2.5 miles of the Greenway (2010)



Percentages of Population by Race within 2.5 miles of the Greenway (2010)



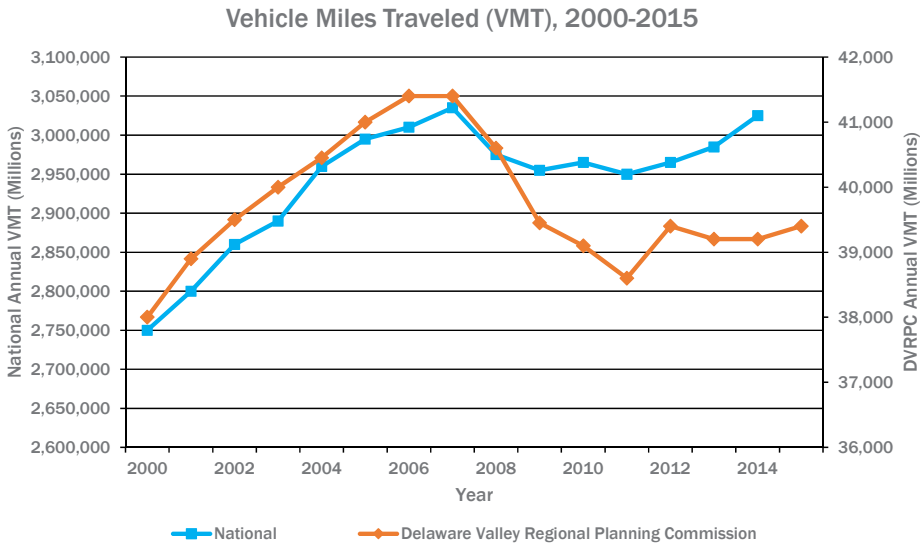
Household Income in the Past 12 Months within 2.5 miles of the Greenway (in 2016 inflation-adjusted dollars)

Transport + Safety Benefits

A multi-modal approach to reducing car trips is crucial to help manage transportation congestion and to give people more mobility choices as the annual vehicle miles traveled figures slowly rebound across the Delaware Valley from the Great Recession dip (see figure below). Biking and walking are essential modes of transportation, particularly for those who cannot afford the costs associated with vehicle ownership and maintenance.

The East Coast Greenway, which runs parallel to Interstate 95 and several passenger rail lines throughout the region, acts as a major alternative transportation corridor that is both safe and complementary to existing transit in densely populated communities. Completing the Greenway and connecting trail networks can help reduce the region's reliance on motorized transportation. Transportation is the top source of carbon emissions in the U.S. Reducing our carbon footprint requires changing people's lifestyles, habits, and culture. Trails can help, especially when coordinated with transit to provide a missing link. An investment in the East Coast Greenway stretches out the investments made elsewhere in our transportation system and provides users with greater access to safe, cost-effective, and sustainable modes of travel.

Vision Zero:
A strategy to eliminate all traffic-related deaths and severe injuries, while increasing safety, health, and mobility for all.



In addition to the increase in VMT, serious injuries and deaths on roads in the Delaware River Valley are slowly increasing as well. In Philadelphia, overall traffic deaths, including pedestrian and cyclist deaths, have seen a slight upward trend over the past five years to more than 100 deaths per year. [2] [3]



Separated trails such as the East Coast Greenway can help reduce traffic fatalities by giving cyclists and pedestrians a safe alternative to on-street infrastructure while also incorporating traffic calming design elements that help meet Vision Zero goals for all transportation modes. An analysis performed by the Bicycle Coalition of Greater Philadelphia found that nearly half of Philadelphia's dangerous roadways are located in neighborhoods of low income and people of color, which includes Southwest Philadelphia, where the ECG is located.[4] The development of Greenway and its trail network can increase access to safe transportation options for these disproportionately affected neighborhoods.

There is a clear demand for a multi-modal system in the region. The City of Philadelphia has the largest percentage of bicycle commuters of any city with a population over 1 million, with about 2.6% of the overall city's commuters traveling by bicycle.[5] The census tracts with the highest percentages of bicycle commuters include University City, Center City, and the River Wards, all areas served by current or future ECG segments.[6] Completing the ECG in Philadelphia will only increase these numbers. Completing the Cobbs Creek Trail, Schuylkill River Trail, Spring Garden Greenway, and Delaware River Trail creates a bike-walk corridor connecting neighborhoods and job centers in and around Philadelphia.

Many high-density residential developments are being constructed or planned along the Schuylkill and Delaware Rivers adjacent to the Greenway and its connector trails. Mixed-use developments are also being constructed along the ECG in places such as Chester and Bensalem, PA. The ECG provides valuable first- and last-mile connections between SEPTA and NJ TRANSIT rail and bus lines.



"Investing in and prioritizing the East Coast Greenway to complete key sections in underserved communities will both safely connect residents to employment and education and help reduce traffic fatalities that are concentrated in these neighborhoods. The Greenway offers the best bang for the buck in terms of infrastructure investment that brings economic, public health and environmental benefits to neighborhoods that need it the most."

Sarah Clark Stewart, executive director
Bicycle Coalition of Greater Philadelphia

Case Study: Jack A. Markell Trail

The opening of the Jack A. Markell Trail in 2018 was heralded as an advocacy victory that was over 15 years in the making. This portion of the East Coast Greenway is now part of a 6.5-mile continuous off-road trail between the historic riverside community of New Castle, Delaware, and downtown Wilmington. With a 300-foot-long signature bridge over the Christina River and a 2,300-foot-long boardwalk through the wetlands of the Russell Peterson Wildlife Refuge, the construction of the trail was no small feat. In fact, there was worry that the high cost of the construction was too much to spend on a project like this.

"There can be a fear of the big dollar numbers when it comes to trails like this," says Matt Meyer, county executive for New Castle County. "They're investments in our future. We can't be afraid to think big."



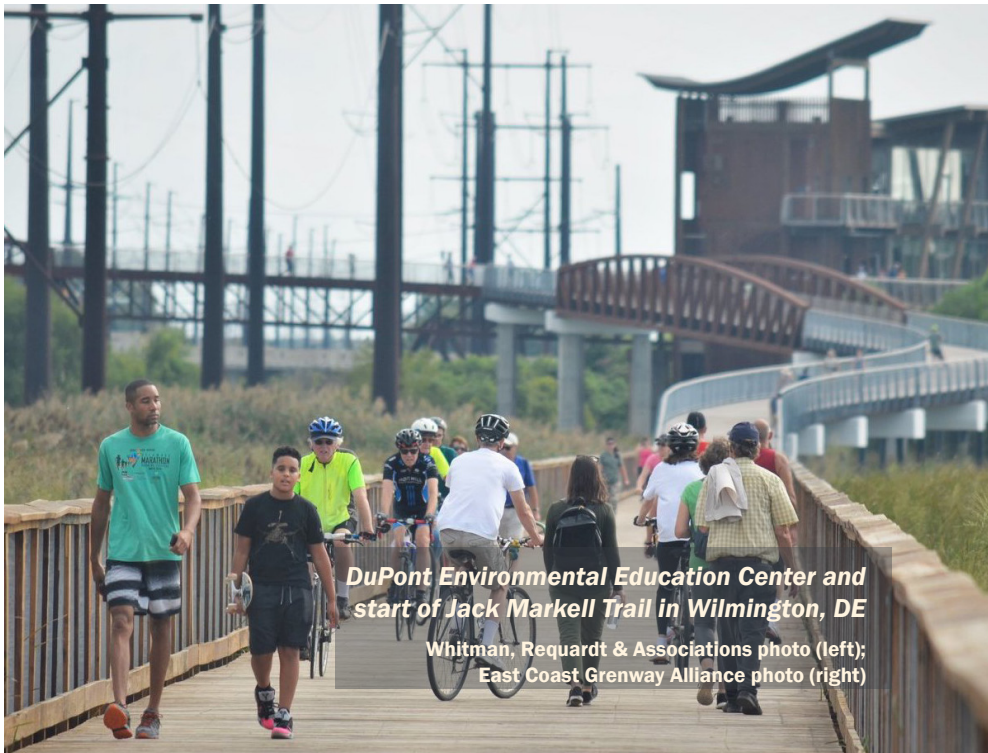
New Castle County Executive Matt Meyer, a passionate bicycle advocate

University of Delaware photo

Meyer is an avid bicyclist and understands the importance the Markell Trail has on the local and regional connectivity of alternative transportation. "Over 100 years ago, cities would pop up as rail lines were built. Now cities are repurposing these rail lines to create a new kind of connectivity between population centers." With a direct trail connection to downtown Wilmington and the train station, the trail is viewed as a true commuter alternative to Interstate 95. In fact, with DelDOT starting a major I-95 reconstruction project in 2021, Meyer hopes that more people can see the benefit to using the Markell Trail instead of driving. "We hope that the visibility of this beautiful bridge from I-95 will help encourage people to hop on a bike to get to work instead of being stuck in traffic."

As with most trails of this size and scope, it was built in phases and leveraged several sources of federal, state, county, and private funding. Meyer says it is important that staff members from all levels of government and trail advocates work together. "It is important





DuPont Environmental Education Center and start of Jack Markell Trail in Wilmington, DE

Whitman, Requardt & Associations photo (left); East Coast Grenway Alliance photo (right)



Jack Markell Trail in Wilmington, DE.
Whitman, Requardt & Associates photo

that a unified message is being sent by everyone involved in order to break down any bureaucratic obstacles."

Now that the Markell Trail is complete and open to the public, Meyer views it as the spine of a countywide trail network. He announced a Connecting Communities initiative in the fall of 2018, envisioning 12 new trail segments across the county, including two that would link directly to the Markell Trail.

Besides the mobility impacts the newly opened trail offers, it also affords area residents access to a habitat that was previously off-limits to the public. The Russell Peterson Wildlife Refuge is 212 acres of freshwater tidal marsh adjacent to the Christina River and is home to many species such as Eastern painted turtles, American bald eagles, and river otters. The trail is also directly adjacent to the DuPont Environmental Education Center, where visitors can rent bikes and kayaks and learn more about the protected wetland area.

Meyer hopes that the build-out of the East Coast Greenway and other trails in the county's network will help to lower the unusually high rate of pedestrian deaths in his county, which is at 2.7 per 100,000 (the national average is 1.9 per 100,000).[7] About 7 percent of New Castle County households don't own vehicles, and about 36 percent are one-vehicle households.[8]

"I love it when people can walk out their front door and walk or ride to one of our 248 county parks and have practical and safe bike routes to work. That's the vision we hope to achieve," he says.

Economic Benefits

By connecting many of the historical, cultural, and business centers of the Delaware Watershed and the wider Mid-Atlantic region, the East Coast Greenway offers exciting opportunities for economic growth in the area. Financial benefits include construction spending, tourism, and property value increases. Given potential property value increases, current residents should be at the table early and throughout these projects to voice their needs, so that affordability, cultural heritage, and local ownership are prioritized and preserved, especially in low-income communities where displacement is a potential threat. Through inclusive and equitable engagement, underserved and historically disadvantaged communities can benefit from trails and the opportunities they present.

One of the most immediate economic impacts to the region is the direct construction spending that the build-out of the remaining 89 miles of the Greenway in Delaware, Pennsylvania, and South Jersey will bring. An estimated $239 million (in 2019 dollars) construction spending is anticipated to complete the ECG in the Delaware Watershed.

ESTIMATED CONSTRUCTION COSTS
(FOR ECG PROJECTS NOT YET UNDER CONSTRUCTION)

MAJOR PROJECTS:

SCHUYLKILL RIVER TRAIL, CHRISTIAN TO CRESCENT SEGMENT:	$36M
SPRING GARDEN STREET GREENWAY:	$25M
REMAINING 89 MILES OF TRAIL AT AN ASSUMED $2 MILLION PER MILE:	$178M
TOTAL ESTIMATED CONSTRUCTION COSTS:	$239M

	TOTAL ECONOMIC IMPACT FROM CONSTRUCTION OF THE ECG	AVERAGE PER MILE OF CONSTRUCTION
DIRECT IMPACT:	$239M	$2.6M
INDIRECT AND INDUCED:	$168M	$1.9M
TOTAL OUTPUT:	$408M	$4.5M
TOTAL JOBS:	2,460	27
TOTAL EARNINGS:	$144M	$1.6M

How was this calculated?

Within an interconnected economy, each dollar of direct expenditures generates multiple waves of spillover impacts through spending on goods and services purchased within a given region (indirect impacts) as well as spending resulting from the labor income generated by the initial activity that ripples through the region (induced impacts). IMPLAN modeling software was used to estimate indirect and induced impacts, and added to the direct activity to produce total economic impacts. Using a combination of data from planned trail construction and industry estimates, an average per mile cost of construction was calculated for the remaining ECG (the direct expenditure). This estimate is conservative, as elements such as signage, placemaking, and fixtures are not included in the costs. Construction costs were divided into hard and soft costs before using IMPLAN to calculate the economic impact of construction at the Philadelphia Metropolitan Statistical Area (MSA) level.

ENSURING EQUITABLE BENEFITS OF TRAILS

Trails have the potential to bring great economic benefit from increased property values. But to ensure this benefit is equitably distributed and affordability preserved, deliberate and inclusive engagement is required at all levels and across sectors prioritizing existing residents' needs. Trails and other amenities in urban areas can quickly make a neighborhood more desirable, which can in turn lead to higher real estate valuations, property taxes, and rents. Trail planners must be cognizant of the market changes that can occur with the development of any new public amenity, including trails. Early in the planning process, there should be a focused effort to engage area residents of all demographic backgrounds, incomes, and physical abilities to inform the trail design and to build support. New trail projects should strive to meet local needs as defined by the residents and to address any potential negative impacts such as housing affordability. With deliberate and inclusive community-based planning, trails can instead become platforms to support local economic development initiatives, such as workforce development programs and small business enterprises.

Ensuring equitable benefits of a trail for a local area requires a comprehensive and deliberate approach that is both complex and context-sensitive, but at its core acknowledges the historic injustice and disadvantage faced by residents in the affected area. This may require a combination of strategies, including policy reform, cross-sector partnerships, education, and institutional change, but always with local representation at the table early and throughout the process.

For more information on some best practices for inclusive trail planning and programming, please see "Inclusionary Trail Planning Tool Kit: A guide to planning and programming equitable trail networks," prepared by Julia Raskin for the Pennsylvania Environmental Council, March 2019.



Neighbors and project leaders celebrate the opening of 58th Street Greenway in southwest Philadelphia in 2013

PlanPhilly photo

ECONOMIC BENEFIT: PROPERTY VALUES

Trails are investments in the local neighborhood and increasingly occupy the of the list of desired amenities along with parks, museums, shopping centers, and proximity to jobs. Several studies have shown that property values increase due to the construction of a paved trail within walking distance. These studies have shown price premiums of around 5 percent due to the installation of the trail. [12] [13]

Corporate property owners also see the advantage to trails. The Schuylkill River waterfront in Philadelphia's University City and Center City is booming with tenants relocating to take advantage of the trail access and riverfront amenities. The Delaware River waterfront is also seeing its share of development activity due to the proposed trail and freeway cap in Center City. Bristol-Myers Squibb has provided more than $2.5 million to develop the Lawrence-Hopewell Trail on its Lawrenceville, N.J., campus, which connects directly to the East Coast Greenway less than a mile away.[14]



Riverfront Park in Trenton, N.J., part of the Delaware River Heritage Trail. NV5 photo

AN ASSUMED 5% PRICE PREMIUM OF THE 188,000 HOUSING UNITS THAT ARE

WITHIN ¼ MILE

OF THE EAST COAST GREENWAY IN THE DELAWARE VALLEY IS A TOTAL OF

$1.77 BILLION PREMIUM

THIS MAKES FOR AN AVERAGE OF

$9,400 PREMIUM/UNIT

How was this calculated?

There are numerous studies, including hedonic regression analyses performed by Econsult Solutions, which demonstrate the beneficial impact that greenways and open space have on residential property values, after controlling for variables such as home quality, distance to downtowns, and seasonality. Based on research and previous analysis, a premium of 5 percent was calculated for homes within a quarter mile of a trail. Using a quarter mile buffer around the ECG, the differential value of these homes was aggregated to be approximately $1.77 billion.

A 2018 STUDY IN NORTH CAROLINA FOUND THAT EVERY $1.00 INVESTED IN ONE-TIME TRAIL CONSTRUCTION GENERATES $1.72 ANNUALLY FROM LOCAL BUSINESS REVENUE, SALES TAX REVENUE, AND BENEFITS RELATED TO HEALTH AND TRANSPORTATION.[9]

17



A section of the Delaware River Trail in Philadelphia under construction in late 2018.
NV5 photo

"We view trail networks and green spaces as part of our business strategy. The environment in which we build our buildings and the amenities we offer outside our buildings are key attractors for tenants."

Jerry Sweeney, CEO, President, and Trustee, Brandywine Realty Trust President; Chairman of the Board, Schuylkill River Development Corporation[15]

ECONOMIC IMPACT: TOURISM

Bicycle tourism is a fast-growing segment of the cycling market. People of all ages and riding abilities are using their bicycles to take trips that last as short as a single day or as long as several weeks. Each year, local and out-of-town visitors using a given trail generate spending from purchases that may not otherwise happen in the trail's host communities. Visitors spend on "soft goods" such as foods, drinks, and snacks; on "hard goods" such as their equipment; and out of town visitors may even spend a night in a hotel and on a meal as they're passing through a town. This spending results in larger economic impacts that support the local retail, restaurant, and hotel sectors, and beyond.

A completed ECG in the Delaware Valley will eventually connect local towns and cities to the rest of the Northeast and Mid-Atlantic, and opens up an entire new market for bicycle tourism. With four of the twenty largest metropolitan areas in the United States (Washington, Baltimore, Philadelphia, and New York City) within a 1-3 day bicycle ride of the Delaware Valley, the potential number of bicycle tourists is significant. With a trip coupled with SEPTA, NJ TRANSIT, or Amtrak, which all allow bikes on trains (to some capacity), a one-way bike trip is also possible. Consider the following example itineraries:

- A college student and her boyfriend take a day trip from Philadelphia to Trenton. They ride across the Ben Franklin bridge and ride up the New Jersey side of the Delaware River. They stumble upon a farmer's market in Palmyra, New Jersey, where they decide to eat lunch and grab fresh sweet corn to take home. Once they reach Trenton, they have dinner while they wait for the SEPTA train back to Center City.
- A group of three friends leave their neighborhood in Newport, Delaware, and decide to ride to New York City. They plan on taking 3 days to ride the 150-mile trip, and take a train back to Wilmington. Along the way, the trio eat at a variety of local restaurants, stop to have a beer at breweries in Philadelphia and Croydon, and sleep overnight at hotels in Bristol and New Brunswick.
- A retired couple from Georgia is riding the entire length of the East Coast Greenway. They ride about 45 miles a day, with no set itinerary. Once they reach Wilmington, they decide to stay an extra night so they can visit the Winterthur Museum and the Delaware Art Museum.

DAILY BICYCLE TOURISM SPENDING

While it is difficult to model the number of bicycle tourists and expenditures on a future completed ECG in the Delaware Valley, the following data has been gathered from completed trails across the United States: [10]

Great Allegheny Passage (PA & MD): The average overnight traveler on the GAP spends $125 per day.

State of Michigan: Touring cyclists spend an average of $71 per day with the average trip length of 6 days.

Katy Trail (Missouri): The average party of 3.2 visitors spent $182 total during their visit and $147 per party day.

State of Montana: Multi-day cyclists spend $75 - $103 per day while in Montana.



Delaware & Raritan Canal Path, Mercer County, New Jersey
East Coast Greenway Alliance photo

BASED ON COMPLETED PORTIONS OF EAST COAST GREENWAY IN THE DELAWARE VALLEY, EVERY MILE OF TRAIL SEES AN AVERAGE:

40K ANNUAL VISITS PER MILE

$6.3M ANNUAL SPENDING, GOODS & SERVICES

GENERATING **$4.8M** IN LOCAL ECONOMIC IMPACT AND SUPPORTING 60 JOBS

$11 SPENT ON SOFT GOODS PER PERSON PER VISIT (ICE CREAM, LUNCH, BEER, ETC.)

$485 SPENT ON HARD GOODS PER PERSON/YEAR (BIKES, RUNNING SHOES, CLOTHING, ETC.)

$90 SPENT ON OVERNIGHT STAYS

How was this calculated?

Annualized pedestrian and bike counts from the Delaware Valley Region Planning Council were used on select East Coast Greenway trails to estimate average per mile user counts, being careful to adjust for out-and-back trips. Based on a variety of industry studies, including the 2009 Schuylkill River Trail User Survey, estimates were developed of the distribution of users that were infrequent trail users, regular users, and overnight guests to develop spending habits, broken into the following categories: soft goods (refreshments and snacks), hard goods (exercise clothing, accessories, and bikes), and overnight expenses.[11] Then the typical spending of various types of trail users was estimated, normalizing on a per mile basis. Those direct expenditures have spillover effects in the economy, which can be modeled using IMPLAN modeling software. A conservative approach was used and only the retail margin of the visitor spending total was used to calculate local economic impact, because retail goods are generally sourced from outside the region.



John Heinz National Wildlife Refuge
East Coast Greenway Alliance photo

Case Study: Bristol Borough

Bristol Borough, a historic river town about 20 miles northeast of Center City Philadelphia, likes to think it sits in the "sweet spot" of the East Coast Greenway. Its walkable downtown environment, access to a SEPTA regional rail line, and waterfront park make it a perfect stop for long-distance bike tourists on the East Coast Greenway or for day-trippers coming out of Philadelphia or Trenton.

"We're ready," says Bristol Borough Business Association representative Patrick Mulhern. "The types of businesses on Mill Street are a one-stop shop for folks riding between Philadelphia and Trenton. We have coffee shops; Indian, Mexican, and Italian restaurants; a pharmacy and supermarket; the Grundy Museum; the Centre for the Arts. There is just a lot of food, activity, and culture in such a small town."

Gaps in the Greenway on either side of Bristol Borough currently prevent riders from enjoying a full off-road route between Philadelphia and Trenton. But with the anticipation of those gaps being closed soon, businesses want to position themselves to make the borough an overnight stay for riders. "There are already several Airbnbs in town, and businesses are adding bicycle racks," says Mulhern.

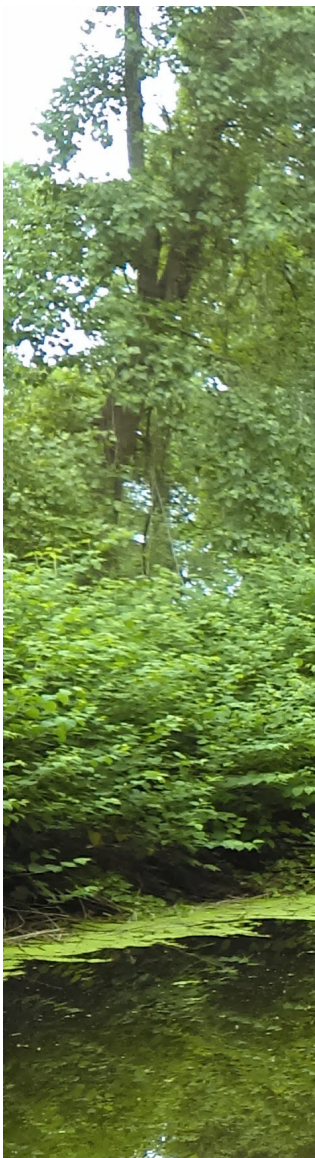
One of those businesses is the Bristol Amish Market. The market is located just steps away from the Delaware & Lehigh Canal Path, a segment of the East Coast Greenway. Ben Stoltzfus, one of the Amish Market owners, admitted that the location next to the trail was not a reason for relocating their business here, but now he realizes the benefits to being immediately adjacent to the trail. "We put bike racks in and they definitely get used. We are looking forward to the gaps in the trail getting closed north and south of here so more folks can stop by and grab a bite to eat and take a look at the furniture and crafts too."

Mulhern hopes that riders plan on making permanent stays in Bristol, too. "We hope that visitors can see how great our community is. With our proximity to Philadelphia, Trenton, and New York by train, and this trail network being built out, we think this is a wonderful place to live."



Mill Street, Bristol
Deluxe Corporation photo





"It's very exciting to think about how the East Coast Greenway will be able to connect so many more people to all the amazing things our town has to offer! I often see groups of cyclists riding past our shop in the morning, and I hope they know how much our town has to offer as a rest area."

Andrew Dittman, Calm Waters Coffee Roasters

Bristol Spurline Trail

Delaware & Lehigh Canal Path

East Coast Greenway Alliance photos

Health Benefits

Car dependency and sedentary lifestyles in the United States have helped fuel a general decline in health. National obesity rates have skyrocketed over the past 30 years from about 12 percent of adults in 1990 to 31 percent in 2018. Physical inactivity is a risk factor for cardiovascular disease, type 2 diabetes, some cancers, depression, and premature death.

There is a clear correlation between lower incomes and higher rates of obesity in the urban areas of the Delaware Watershed.[17] The East Coast Greenway and other trails in our region offer a tremendous public health resource by giving residents a safe and relaxing place to walk or bike. Walking, running, bicycling, and skating can be enjoyable preventative health measures. The health benefits from using trails does not stop at just healthcare cost savings. Physical activity also increases workplace productivity, and people using trails enjoy an intangible boost to their overall well-being.

PHYSICAL FITNESS RANKINGS, UNITED STATES (2018)		
Rank	State	Percentage of adults reporting no physical activity in past 30 days
1	Washington	19.2
17	Pennsylvania	24.9
	United States Average	25.6
35	New Jersey	29.0
41	Delaware	31.0
50	Kentucky	34.4

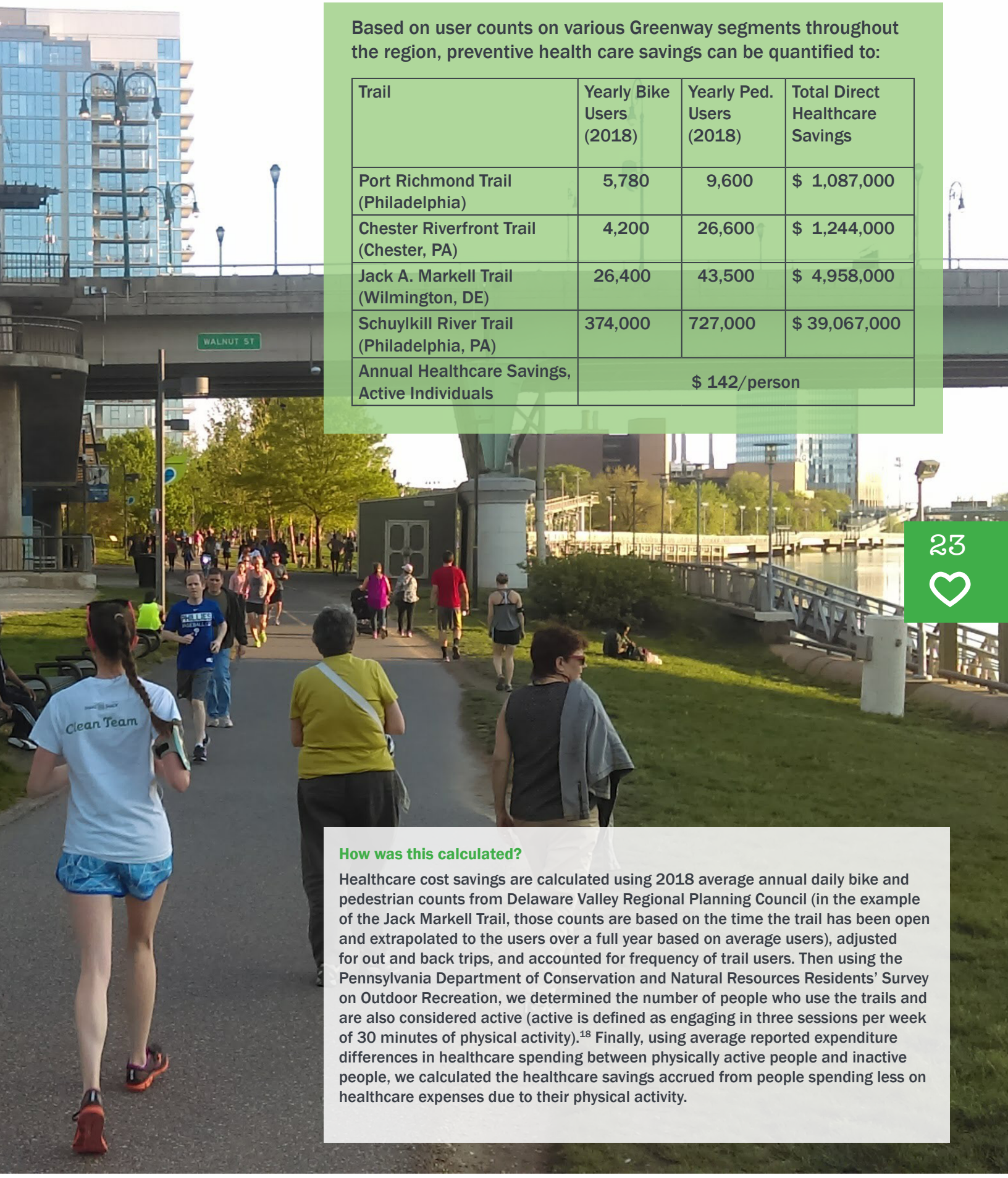
Data provided by United Health Foundation



Schuylkill River Trail, Philadelphia
East Coast Greenway Alliance photo

Based on user counts on various Greenway segments throughout the region, preventive health care savings can be quantified to:

Trail	Yearly Bike Users (2018)	Yearly Ped. Users (2018)	Total Direct Healthcare Savings
Port Richmond Trail (Philadelphia)	5,780	9,600	$ 1,087,000
Chester Riverfront Trail (Chester, PA)	4,200	26,600	$ 1,244,000
Jack A. Markell Trail (Wilmington, DE)	26,400	43,500	$ 4,958,000
Schuylkill River Trail (Philadelphia, PA)	374,000	727,000	$ 39,067,000
Annual Healthcare Savings, Active Individuals	$ 142/person		



How was this calculated?

Healthcare cost savings are calculated using 2018 average annual daily bike and pedestrian counts from Delaware Valley Regional Planning Council (in the example of the Jack Markell Trail, those counts are based on the time the trail has been open and extrapolated to the users over a full year based on average users), adjusted for out and back trips, and accounted for frequency of trail users. Then using the Pennsylvania Department of Conservation and Natural Resources Residents' Survey on Outdoor Recreation, we determined the number of people who use the trails and are also considered active (active is defined as engaging in three sessions per week of 30 minutes of physical activity).[18] Finally, using average reported expenditure differences in healthcare spending between physically active people and inactive people, we calculated the healthcare savings accrued from people spending less on healthcare expenses due to their physical activity.

Environmental Benefits

The routing of the East Coast Greenway deliberately takes advantage of many publicly owned lands, including parks, green spaces, forests, and waterfronts. The route follows creeks and streams, utility line rights-of-way, and rail corridors, providing new access for communities to green space and local waterways. The trail use on these lands allows for not only a conservation of space for the public but also a preservation or restoration of ecosystems, which in turn opens up an opportunity to educate the public and inspire environmental stewardship. The East Coast Greenway and Circuit Trails network connect to nearly every one of the 23 environmental centers in the Delaware River Watershed that are a part of the Alliance for Watershed Education, many of which provide public programming on the nearby trails.

The presence of trails and their surrounding open space have a documented and quantifiable positive impact on the environment. Within a quarter mile of the Greenway in the Delaware Watershed are 9,900 acres of open space (that's 22 percent of the land use within that area). That open space includes 5,800 acres of tree canopy. The tree canopy surrounding a trail supports natural habitats and ecosystems by removing air pollutants and improving air quality, replenishing the water supply, and mitigating floods. All of these ecosystem services have benefits that can be quantified in economic terms, not to mention help stave off the impact of climate change.

ECOSYSTEM SERVICE	SERVICE BENEFIT
Water Supply	$ 12,035,000
Water Quality	$ 2,000,000
Flood Mitigation	$ 8,218,000
Wildlife Habitat Preservation	$ 125,000
Air Pollution Removal	$ 1,658,000
Carbon Sequestration / Storage	$ 15,304,000
TOTAL VALUE OF ENVIRONMENTAL BENEFITS:	**$ 39,340,000**





How was this calculated?

The acreage of ecosystems within a quarter mile of the East Coast Greenway was determined using land cover imagery from the Multi-Resolution Land Cover Characteristic's 2011 National Land Use Land Cover in ArcGIS. Using this acreage by ecosystem, the environmental services benefits were calculated using values from previous externality valuation studies, which estimate the average per-acre value of 10 different ecosystem services. These values were used to calculate the total annual ecosystem service benefit for open space along the East Coast Greenway. In order to estimate carbon sequestration benefits, the i-Tree Vue model developed by the U.S. Forest Service was used to estimate the air pollution removal and carbon sequestration and storage benefits of the preserved open space along the trail.

Delaware River Trail, Philadelphia
NV5 photo



Case Study: Riverfront North Partnership

The Delaware River waterfront in Philadelphia has long been disconnected from its residents. Until recent decades, waterfront parcels throughout the city were almost end-to-end used for industrial purposes. Furthermore, the construction of Interstate 95 in the 1960s less than one-half mile from the edge of the river exacerbated the barrier for area residents attempting to make a connection with the waterfront.

"When the creation of I-95 cut off communities from the river, people forgot that this wonderful natural resource existed just down the road from their doorstep," says Jim Fries, project manager for Riverfront North Partnership. The nonprofit Riverfront North is charged with bringing people and natural habitat back to the Delaware River waterfront in the northeast section of Philadelphia. This includes the development of 8 miles of the East Coast Greenway. About 65 percent of Riverfront North's section of the ECG has been constructed, with the remaining gaps currently in design and due to be built in the next few years.

Waterfront habitat restoration work has been piggybacking on Riverfront North's trail construction efforts. Lardner's Point Park was one of the first habitat restoration projects, including a section of the Kensington & Tacony Trail. Lardner's Point now has riparian restoration and tidal wetlands easily accessible from the Greenway. The park's habitats attract many species such as bald eagles, striped bass, beavers, and more.

Fries, a landscape architect, is excited about the ecological renewal along the waterfront and the way nature is starting to reclaim its space along the formerly polluted shoreline.

"The creation of the Greenway reconnects people to this riverfront greenspace, to other neighborhoods, and fosters a new sense of environmental awareness and stewardship."

With the ECG gaps closing in a few years, a next area of focus for Riverfront North will be enhancing the connections to the main trail from adjacent neighborhoods, maximizing residents' ability to walk or bike to the riverfront from their front doors.

















"We believe that all neighborhoods in Philadelphia should have equal access to nature, greenspace and a safe place to recreate. We know that what we are doing is building towards that basic goal."

Stephanie Phillips,
Riverfront North Partnership
Executive Director

Top and center: pre- and post-construction of the Greenway.

Bottom: pre- and post-construction of Lardner's Point Park. Opposite: the living shoreline at Lardner's Point Park.

Riverfront North Partnership photos

Conclusion

This report quantifies how completing the East Coast Greenway would benefit the lower Delaware River Watershed region. While the infrastructure investment is significant, these findings project the Greenway would generate an over ten-fold return of more than $3 billion in public health, environmental, and economic benefits. Partners in the region have set a goal of completing their part of the East Coast Greenway by 2025. They will need a new influx in resources to make that aggressive timeline possible.

Visionary elected leaders, agencies, private sector partners, and philanthropists have the opportunity to increase the quality of life for millions of people throughout the region. Completing the East Coast Greenway will provide safe access to nature and active recreation. By synergistically aligning the biking and walking route with regional transit, we can improve access to low-cost transport while decreasing congestion and carbon emissions.

As with many growing cities in today's strong economy, planners and advocates need to focus on equity and inclusion throughout the greenway development process to ensure the benefits are shared across the diverse population who live, work, and play in the corridor.

Acknowledgements

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Protecting the Delaware River watershed is one of the **William Penn Foundation**'s focus areas. Since 2010, the Foundation has funded trail and greenway development to close key gaps and grow environmental stewardship of the watershed.

GSK's mission is to help people do more, feel better, and live longer. The East Coast Greenway Alliance's partnership with GSK allows us to provide active events that promote healthy living.



Bartram's Mile segment of the East Coast Greenway in West Philadelphia

East Coast Greenway Alliance photo

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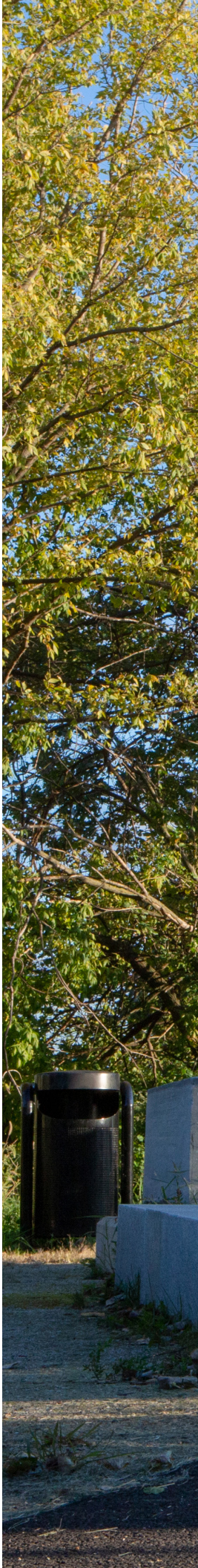
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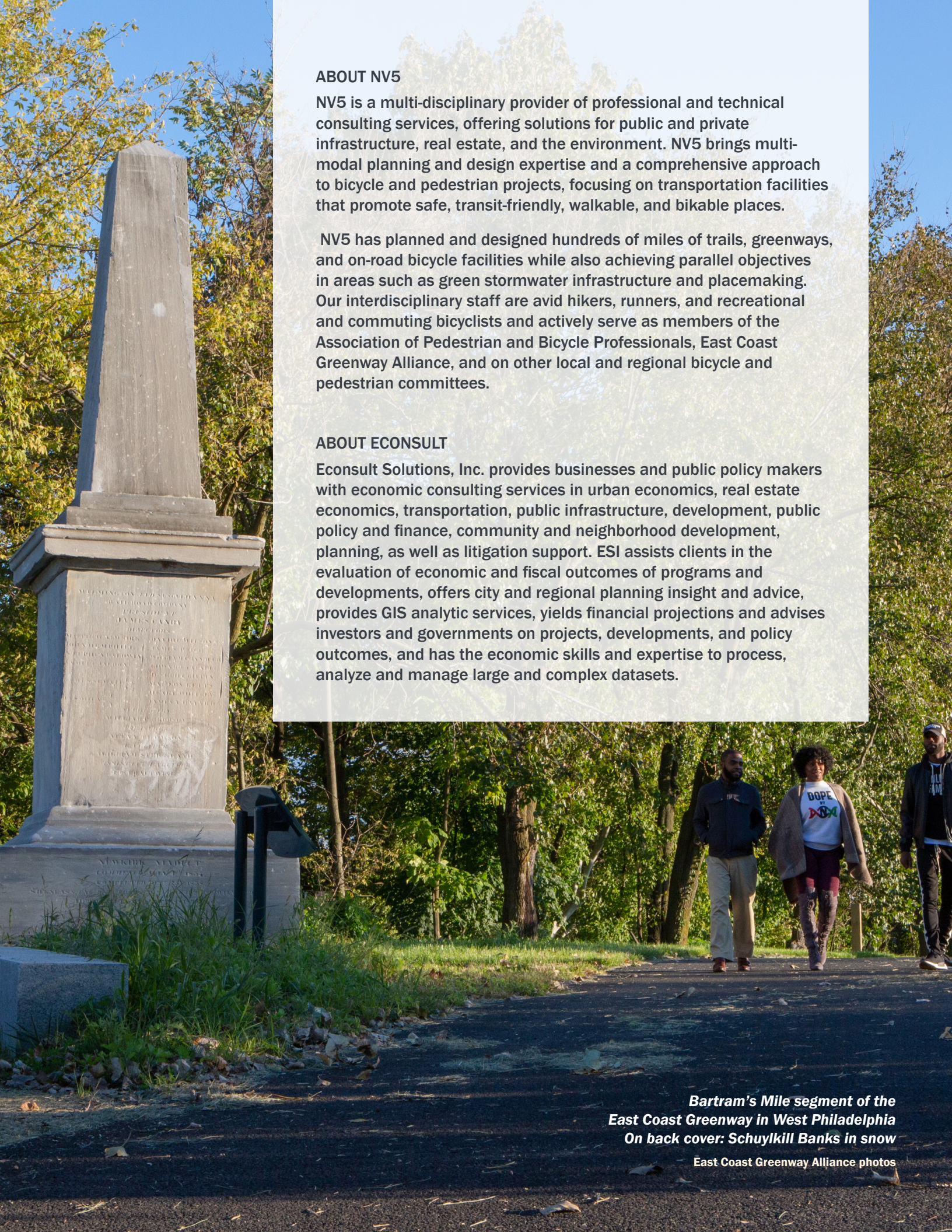
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ABOUT NV5

NV5 is a multi-disciplinary provider of professional and technical consulting services, offering solutions for public and private infrastructure, real estate, and the environment. NV5 brings multi-modal planning and design expertise and a comprehensive approach to bicycle and pedestrian projects, focusing on transportation facilities that promote safe, transit-friendly, walkable, and bikable places.

NV5 has planned and designed hundreds of miles of trails, greenways, and on-road bicycle facilities while also achieving parallel objectives in areas such as green stormwater infrastructure and placemaking. Our interdisciplinary staff are avid hikers, runners, and recreational and commuting bicyclists and actively serve as members of the Association of Pedestrian and Bicycle Professionals, East Coast Greenway Alliance, and on other local and regional bicycle and pedestrian committees.

ABOUT ECONSULT

Econsult Solutions, Inc. provides businesses and public policy makers with economic consulting services in urban economics, real estate economics, transportation, public infrastructure, development, public policy and finance, community and neighborhood development, planning, as well as litigation support. ESI assists clients in the evaluation of economic and fiscal outcomes of programs and developments, offers city and regional planning insight and advice, provides GIS analytic services, yields financial projections and advises investors and governments on projects, developments, and policy outcomes, and has the economic skills and expertise to process, analyze and manage large and complex datasets.

Bartram's Mile segment of the East Coast Greenway in West Philadelphia
On back cover: Schuylkill Banks in snow

East Coast Greenway Alliance photos



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East Coast Greenway® ALLIANCE

Prepared By:

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